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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,440	12/08/2003	Chandra Sekhar Namuduri	GP-303152	2250

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EXAMINER
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BURCH, MELODY M /

ART UNIT	PAPER NUMBER
3683	

DATE MAILED: 12/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/730,440	<b>Applicant(s)</b> NAMUDURI, CHANDRA SEKHAR	
	<b>Examiner</b> Melody M. Burch	<b>Art Unit</b> 3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 5,10,15,17 and 28 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21 is/are allowed.
- 6) ☒ Claim(s) 1-4,6-9,11-14,16,18-20,22-27 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6, 11, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by JP-09264492 (JP'492).

JP'492 shows in figure 1 an apparatus operable to provide damping between a sprung mass and an unsprung mass comprising: a linear to rotary conversion mechanism comprising a translatable member 13,14 having a first attachment point 13a that is adapted for generally linear translation in a forward and a reverse direction and a rotatable member comprising a rotatable shaft 6 that is rotatably coupled to the translatable member; wherein translation of the translatable member in one of the forward or the reverse directions produces a forward or a reverse rotation of the rotatable member and shaft, respectively, and a damping mechanism comprising a housing having a second attachment point near 2, a first end shown to the right with a bore that is adapted to rotatably receive the shaft therethrough, a side wall 1c having an inner surface and a second end shown to the left, a hub 7 having an outer surface that is fixed to the shaft and located within the inner surface of the sidewall such that the hub and sidewall form a channel 10b therebetween, a means for generating a single electromagnetic field within the channel disclosed in lines 1-5 from the bottom of [0014]

to change the viscosity of the fluid that in turn provides variable resistance to rotation of the hub and translation of the translatable member.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 26, 27, 29, 30, 31, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-09264492 (JP'492).

JP'492 shows in figure 1 an apparatus operable to provide damping between a sprung mass and an unsprung mass comprising: a linear to rotary conversion mechanism comprising a translatable member 13,14 having a first attachment point 13a that is adapted for generally linear translation in a forward and a reverse direction and a rotatable member comprising a rotatable shaft 6 that is rotatably coupled to the translatable member; wherein translation of the translatable member in one of the forward or the reverse directions produces a forward or a reverse rotation of the rotatable member and shaft, respectively, and a damping mechanism comprising a housing having a second attachment point near 2, a first end shown to the right with a bore that is adapted to rotatably receive the shaft therethrough, a side wall 1c having an inner surface and a second end shown to the left, a hub 7 having an outer surface that is fixed to the shaft and located within the inner surface of the sidewall such that the hub

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and sidewall form a channel 10b therebetween, a means for generating a single electromagnetic field within the channel disclosed in lines 1-5 from the bottom of [0014] and a fluid 10 located within the channel having a viscosity that can be varied by the application of the field, wherein the fluid is an electrorheological fluid, wherein the means for applying an electromagnetic field within the channel is an electrode means that is located proximate the channel and wherein the hub comprises a cylindrical base having an outer rim and that is fixed to the shaft and a cylindrical wall extending from the outer rim and located adjacent to the inner surface of the sidewall of the housing, wherein a first portion between the sidewall of the housing and the cylindrical wall of the hub comprises the channel, and further comprising a cylindrical core 2c attached to the second end of the housing and extending along and adjacent to the cylindrical wall of the hub, wherein a second portion between the cylindrical wall of the hub and the cylindrical core further comprises the channel and further comprising a lower seal 8 and an upper seal 8 for sealing the fluid in the channel, the lower seal located between the first end of the housing and the hub and the second seal located between the cylindrical core and the hub.

JP'492 is silent as to the electrode including a pair of electrodes.

In *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

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5. Claims 2-4, 7-9, 12-14, 16, 18, 19, 20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-09264492 (JP'492) in view of US Patent 5878997 to Miesner.

Re: claims: 2-4, 7-9, 12-14, 16, 19, 20, and 22-24. JP'492 lacks the limitation of the fluid being MR fluid.

Miesner teaches in the first four lines of the abstract and in figure 1 the use of a damping apparatus having MR fluid and coils.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the fluid of JP'492 to have been MR fluid, in view of the teachings of DE'176, in order to provide a functionally equivalent means of permitting a change in viscosity of the fluid to vary resistance to hub rotation.

Re: claim 18. JP'492, as modified, lacks the limitation of the base comprising a non-magnetic material and the wall having a magnetic material.

Miesner teaches the use of the base being non-magnetic (or free of coils) and the wall being magnetic (or having coils).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the arrangement of JP'492, as modified, to have included the magnetic/non-magnetic arrangement, as taught by Miesner, in order to constrain the field to a certain area for better control.

6. Claims 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-09264492 (JP'492) in view of US Patent Application 2003/0030523 to Bell et al.

JP'492 is silent with regards to the sprung mass specifically being a chassis and

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the unsprung mass specifically being a wheel and axle.

Bell et al. teach in the figure on the front of the publication the use of a linear damping arrangement 18 in which the sprung mass is a vehicle chassis 50 and the unsprung mass is a wheel and axle 26 and the axle portion shown above element 80.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the damping arrangement of JP'492 to have been utilized in the environment of chassis sprung mass and a wheel and axle unsprung mass, as taught by Bell et al., in order to provide a means of improving the feel of the ride of a passenger in a vehicle.

***Allowable Subject Matter***

7. Claim 21 is allowed.

***Response to Arguments***

8. Applicant's arguments filed 9/25/06 have been fully considered but they are not persuasive.

With regards to claim 1, Applicant argues that Yoshiaki fails to disclose "a means for generating a single electromagnetic field in response to an applied electric signal." Applicant explained that the means for generating the single electromagnetic field in the instant invention comprises *coil* 200 and that Yoshiaki included a device for electrically viscous fluid wherein the viscosity is adjusted using an *electrode*. Examiner notes that Applicant is not limited to the "means for generating the single electromagnetic field" being a coil since Applicant also describes a pair of electrodes as the "means for generating the single electromagnetic field." See claim 26. Since Applicant admits in

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the recitation of claim 26 that electrodes represent a means for generating a single electromagnetic field, Examiner maintains that the electrode disclosed in the Yoshiaki reference is a means for generating a single electromagnetic field. Since the coil language was not explicitly recited in claim 1, the 102 rejection is maintained.

With regards to the use of the Miesner reference, Applicant argues that Miesner teaches an electromagnetic structure having a *dual* coil arrangement and that the claim calls for the generation of a *single* electromagnetic field. Examiner notes that the field generation being singular is satisfied by Yoshiaki. The Miesner reference was used solely for the teaching of the use of coils and MR fluids for adjusting fluid viscosity to adjust damping characteristics. It is reiterated that Miesner was not used to teach the electromagnetic field being a single field because that limitation was satisfied by the base reference.

Finally, Applicant argued that utilizing an ER fluid is not the functional equivalent of utilizing MR fluid and that such a change could require a substantial redesign. Examiner disagrees and notes that US Patent Application 2003/0127293 to Rosenfeldt et al. far from suggests that the replacement of an ER fluid/electrode device with an MR fluid/coil device would constitute a "substantial redesign." Paragraph [0024] of the published application simply states that "[i]nstead of the use of an electrorheological liquid as pressure medium, a magnetorheological liquid can also be utilized. With the use of magnetorheological liquids, electrically actuable coil arrangements are provided instead of electrode surfaces." Accordingly, the rejections have been maintained.



***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 571-272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James McClellan can be reached on 571-272-6786. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

mmb

November 30, 2006

*Melody M. Burch*  
**Melody M. Burch**  
**Primary Examiner**  
**Art Unit 3683**

*11/30/06*